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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/758,496

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Yin S. Tang

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10/08/2004

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EXAMINER

KOVAL, MELISSA J

ART UNIT

PAPER NUMBER

2851

DATE MAILED: 10/08/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/758,496

Applicant(s)

TANG, YIN S.

Examiner

Melissa J Koval

Art Unit

2851

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 September 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) 9-16, 20 and 21 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1, 2, 4, 6-8, 17 and 19 is/are rejected.
- 7) ☐ Claim(s) 3, 5 and 18 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 15 January 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 4/15/2004.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

Applicant's election with traverse of Species 1 directed to claims 1-8 and 17-19 in the reply filed on September 24, 2004 is acknowledged. The traversal is on the ground(s) that the examiner has placed undue burden on the applicant with the restriction requirement by requiring the applicant to determine what claims are directed to the various figures, and also that independent and distinct inventions are not claimed by the applicant. This is not found persuasive because the examiner asserts that the election of species is proper and properly presented to applicant. See MPEP § 806.04(e) wherein it is specifically stated that "claims are never species" and "species are always the specifically different embodiments". Also see MPEP § 808.01(a), and MPEP § 809.02(a).

Furthermore, applicant's traversal is not found persuasive because the examiner asserts that the inventions are independent or distinct as claimed and that there is a serious burden on the examiner if the restriction is not required. The at least two distinct species claimed, although requiring an overlapping search, might require the application of more than one reference for the rejection of the claims drawn to diffraction grating embodiments and prism embodiments. A search may also be required in the prism art with regard to the latter embodiment nonelected with traverse by the applicant. The examiner thanks applicant for his remarks in paragraphs three and four of the response filed on September 24, 2004, and particularly those remarks directed to diffraction gratings configured in either a transmissive or reflective mode.

Should applicant traverse on the ground that the species are not patentably distinct, applicant should submit evidence or identify such evidence now of record showing the species to be obvious variants or clearly admit on the record that this is the case. In either instance, if the examiner finds one of the inventions unpatentable over the prior art, the evidence or admission may be used in a rejection under 35 U.S.C. 103(a) of the other invention.

Claims 9 through 16, 20 and 21 stand withdrawn from consideration.

The requirement is still deemed proper and is therefore made FINAL.

Specification

The disclosure is objected to because of the following informalities:

On page 10, line 14, the U.S. serial number referred to therein is missing.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 2, 4, 6, 7, 17, and 19 are rejected under 35 U.S.C. 102(b) as being anticipated by Ishikawa et al. ('110 B1).

Refer to Figure 14 of Ishikawa et al. ('110 B1), for example. A moving diffraction grating is shown therein. Also see column 10, lines 30 through 67, wherein the incorporation of reference numerals from other embodiments is explained with respect

to the "Fifth Embodiment," and a teaching for the diffraction grating is given. Also refer to the "Background of the Invention," regarding single-panel color projectors, and a teaching for the "First Embodiment," beginning in column 4, for reference numerals not described with respect to Figure 14.

Claim 1 sets forth: "A color projection system, comprising:
a lamp (white light source 1),
at least one diffraction grating configured to diffract light from the lamp into a
diffracted beam (See phase volume diffraction grating 11 and refer to column 10,
lines 38 through 44.); and

an LC microdisplay panel configured to modulate the diffracted beam from the
diffraction grating (See light valve 14 and column 11, lines 5 and 6. Also see column 11,
lines 21 through 32. Micro-displays are also discussed in "The Background of the
Invention" of '110 B1.), wherein by moving the at least one diffraction grating with
respect to the light from the lamp, the diffracted beam sequentially comprises a red, a
green, and a blue beam." Also see column 10, lines 49 through 67.

Claim 2 sets forth: "The color projection system of claim 1, further comprising:
a motor to move the at least one diffraction grating with respect to the light from
the lamp." See linear motor/encoder 21.

Claim 4 sets forth: "The color projection system of claim 1, wherein the at least
one diffraction grating comprises three diffraction gratings, each diffraction grating being
configured to diffract a different color selected from the group of red, green, and blue."

Figure 14 shows that diffraction grating 11 comprises multiple components. The teachings of column 10, lines 38 through 67, meet the plain language of the claim.

Claim 6 sets forth: "The color projection system of claim 1, wherein the at least one diffraction grating is a transmission grating." Figure 14 illustrates a grating that transmits light.

Claim 7 sets forth: "The color projection system of claim 1, wherein the LC microdisplay panel is a reflective LC microdisplay panel." Again refer to column 11, lines 5 and 6.

Method claim 17 is rejected for the same reasons already applied in the rejection of claim 1.

Method claim 19 is rejected for the same reasons already applied in the rejection of claim 4.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ishikawa et al. ('110 B1) in view of Hayashi et al. ('348 A1).

Claim 8 sets forth: "The color projection system of claim 1, wherein the LC panel is a transmissive LC microdisplay panel."

Ishikawa et al ('110 B1) teach all of the elements of claim 8, except that Ishikawa et al. show a reflective light valve. See column 11, lines 28 through 33, wherein Ishikawa et al. teach that a light valve other than a reflective light valve may be used. However, Ishikawa et al. do not specifically use the term "transmissive" with respect to alternative light valves.

Transmissive light valves are well-known in the art for use in projection systems comprising diffraction gratings as shown by Hayashi ('348 A1). Refer to Figure 8 of Hayashi ('348 A1), for example. Light transmitted through diffraction grating 14 is then transmitted by display panel 9. See section [0083].

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to use a transmissive light valve instead of a reflective light valve, as suggested by Ishikawa et al. ('101 B1) and taught by Hayashi ('348 A1) in Figure 8, for example. The motivation for one having ordinary skill in the art to make such a substitution of one valve for another, thus meeting the limitations of claim 8, would be to achieve a brighter projection system. A projection system having increased brightness is an object of the invention for both Ishikawa et al. ('110 B1) and Hayashi ('348 A1).

Allowable Subject Matter

Claims 3, 5 and 18 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter:

The prior art of record neither shows nor suggests a color projection system having all of the elements of claim 3 in combination, and particularly: "wherein the motor is configured to move the diffraction grating by rocking the diffraction grating through an angular range." Method claim 18 would be allowable for the same reasons.

The prior art of record neither shows nor suggests a color projection system having all of the elements of claim 5 in combination, and particularly: "The color projection system of claim 1, wherein the at least one diffraction grating is a reflection grating."

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Hayashi U.S. Patent 6,540,361 B1 teaches a display optical apparatus.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Melissa J Koval whose telephone number is (571) 272-2121. The examiner can normally be reached on Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Judy Nguyen can be reached on (571)272-2258. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

MJK


Melissa Jan Koval